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RELATIONSHIP OF THE FARM HOME TO THE FARM BUSINESS

A STUDY IN COTTONWOOD AND STEELE COUNTIES, MINNESOTA

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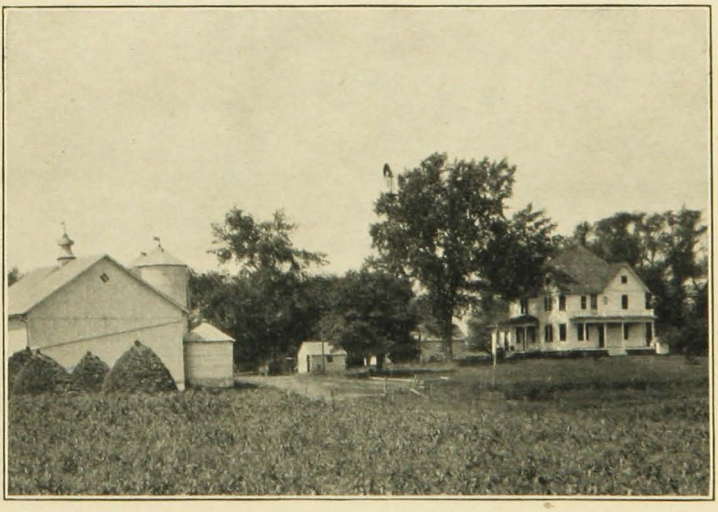
DIVISION OF HOME ECONOMICS



UNIVERSITY FARM, ST. PAUL

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LUCY A. STUDLEY

INTRODUCTION

This is a report of a quantitative and qualitative study of farm homes in Minnesota, with special emphasis on the influence of the farm on the management of the home and the life of the family. The study was prosecuted in the Division of Home Economics under the provisions of the Purnell Act, and was conducted co-operatively with the Division of Agricultural Economics, through which the original material was made available.[1] The home has been considered as a part of the farm unit, but the emphasis has been placed on the farm as a business enterprise, information concerning the home having been gathered largely as related to the farm as a business unit. The purpose has been to show the influence of the farm upon the management of the home and the life of the family.

The information has been gathered from records of two so-called "detailed cost routes" over the period 1920-24. One of these routes was in Steele County, near Owatonna, the other in Cottonwood and Jackson Counties, near Windom. An average of 22 families co-operated each year on each route. These cost routes were maintained in order to help the farmers to operate their farms economically. Each co-operator kept a detailed record of (1) cash receipts and expenditures with particular reference to the farm; (2) an inventory of the farm business; (3) the labor expenditure, including that contributed to the farm by members of the family; (4) feed; (5) production; and (6) farm produce used in the home, not including fruits and vegetables except potatoes. The route statistician visited each farm twice each week, talked with the farmer and checked his records for accuracy and completeness. At the end of the month the records were sent to the office at University Farm, where they were posted and analyzed.

These farms are reasonably representative of the stable type of farming. Steele County farms are dairy farms; those in Cottonwood and Jackson counties are mixed livestock and grain farms.

[1] The writer wishes to express her deep appreciation especially to G. A. Pond, of the Division of Agricultural Economics, and to Andrew T. Hoverstad, formerly of that division, for their generous co-operation with reference to both the use and the interpretation of the data.

Available data pertaining to home management have been grouped as follows:

I. The farm produce used by the farm family.

II. The labor contribution of the family to the farm and of the farmer to the household.

III. The income available for family living.

The number of families on each route and the average size of the families, expressed in terms of adult equivalents, are shown in Table 1.

Table 1

Number of Families on Each Route and Average Size of Families, Adult Equivalents

Year	Steele County Route		Cottonwood-Jackson County Route	
	Families on route	Average adult equivalents	Families on route	Average adult equivalents
1920	23	4.06	21	3.94
1921	23	3.98	22	3.68
1922	22	4.17	21	4.17
1923	22	4.13	22	4.06
1924	23	3.95	22	3 54
Total	113	...	108	...
Average 1920-24	22.6	4.06	21.6	3.88

The figures used for calculating adult equivalents are the same as those used by the Division of Farm Management and Agricultural Economics. The route statistician was instructed to make adjustments in determining adult equivalents according to his judgment.

Man	1.0	Boy—15-16 years	0.9
Woman—moderate work	0.8	Boy—13-14 "	0.8
Woman—hard work	1.0	Boy—11-12 "	0.7
Man or woman—old age	0.8	Boy—10-11 "	0.6
Girl—15-16 years	0.8	Child—6-9 "	0.5
Girl—13-14 "	0.7	Child—2-5 "	0.4
Girl—10-12 "	0.6	Child—under 2 years	0.3

FARM PRODUCE USED BY THE FAMILY

Each family kept a monthly record of butter, cream, whole milk, skimmilk, eggs, poultry, pork, beef, veal, mutton, and potatoes used. The original data reported the amount of meat in terms of live weight. The following deductions have been used to reduce live weight to dressed weight.

Poultry	25 per cent
Pork	25 " "
Beef	50 " "
Veal	45 " "
Mutton	50 " "

Table 2

Average Amounts of Products per Family per Year Supplied Directly by the Farm for Home Use

A. Steele County Route

Year	Average adult equivalents	Butter* lb.	Cream, qt.	Whole milk, qt.	Skim-milk, qt.	Eggs, doz.	Poultry, lb.	Pork,* lb.	Beef,* lb.	Veal, lb.	Mutton, lb.	Potatoes,* bu.
1920	4.06	3.5	70.5	1,038	135.0	107.9	101.0	353.6	99.5	4.6	2.6	28.9
1921	3.98	1.1	63.8	1,152	61.4	111.6	119.0	291.8	96.7	0.0	0.0	23.1
1922	4.17	5.0	64.7	1,238	77.6	121.3	158.0	328.2	155.8	26.0	0.0	27.2
1923	4.13	4.8	90.2	1,020	22.5	124.5	127.0	517.1	152.0	6.8	4.5	27.8
1924	3.95	7.0	131.4	1,260	122.6	117.4	81.0	488.9	303.0	8.7	6.4	26.7
Average, 1920-24...	4.06	4.3	84.2	1,177	84.0	116.5	116.7	395.4	161.5	9.1	2.7	25.8

B. Cottonwood-Jackson County Route

Year	Average adult equivalents	Butter, lb.	Cream, qt.	Whole milk, qt.	Skim-milk, qt.	Eggs, doz.	Poultry, lb.	Pork,* lb.	Beef,* lb.	Veal, lb.	Mutton, lb.	Potatoes,* bu.
1920	3.94	90.7	175.0	494	297	115.4	98.0	398.5	122.0	4.8	0.0	20.0
1921	3.68	82.3	159.4	607	250	105.8	90.6	472.0	129.6	4.9	2.7	20.6
1922	4.17	116.9	143.0	666	273	122.7	94.0	459.2	167.2	0.0	4.3	19.8
1923	4.06	90.9	151.0	582	465	113.4	90.1	455.0	93.4	9.2	0.0	18.4
1924	3.54	70.4	148.0	684	323	98.4	81.6	445.0	176 8	4.5	0.0	20.0
Average, 1920-24...	3.88	89.9	155.0	607	322	111.0	90.7	446.0	141.5	4.7	1.4	19.7

* This does not represent the total amount of these products used by the family. Butter was purchased from the creamery where the cream produced on the farm was sold, and appreciable amounts of beef, pork, and potatoes were bought at retail stores.

The average amounts of farm produce used per family per year for each route are given in Table 2, and a comparison for the five-year period is given in Table 3, also the value of this produce estimated as for 1924 if it had been sold.

Table 3

Comparison by Routes of Average Amounts of Farm Products Used per Family per Year for the Five-Year Period Studied and Their Value at 1924 Prices

Commodity	Steele County			Cottonwood-Jackson County		
	Amount	Price in 1924, cents	Value, 1924	Amount	Price in 1924, cents	Value, 1924
Butter, lb.	4.3*	47.8	$ 2.06	89.9†	41.7	$ 37.49
Cream, qt.	84.2	26.8	22.57	155.0	27.5	42.63
Whole milk, qt.	1,177.0	4.3	50.61	607.0	4.0	24.28
Skimmilk, qt.	84.0	0.9	0.76	322.0	0.8	2.58
Eggs, doz.	116.5	25.5	29.71	111.0	26.0	28.86
Poultry, lb.	116.7	25.0	29.18	90.7	25.0	22.68
Pork, lb.	395.4	10.5	41.52	446.0	12.8	57.09
Beef, lb.	161.5	11.0	17.77	141.5	11.0	15.58
Veal, lb.	9.1	20.0	1.82	4.7	13.0	0.80
Mutton, lb.	2.7	20.0	0.54	1.4	13.0	0.28
Potatoes, bu.	25.8	45.0	11.61	19.7	61.0	10.84
Total	....	...	$208.15	...	...	$243.11

* In addition to the amount made on the farm, 221.6 lb. butter per family was purchased from the creamery.

† In addition to the amount made on the farm, 69.2 lb. butter per family was purchased from the creamery.

These figures show a wide variation in the amount of dairy products used. Table 4 also shows the percentage of families on each route using these products.

Table 4

Percentage of Families Using Farm Products

Commodity	Steele County	Cottonwood-Jackson County
Butter	8.0	75.0
Cream	100.0	97.2
Whole milk	100.0	91.7
Skimmilk	47.0	72.2
Eggs	100.0	98.1
Poultry	100.0	96.3
Pork	79.6	93.5
Beef	31.0	44.4
Veal	8.8	4.6
Mutton	2.7	1.9
Potatoes	99.1	97.2

Whether or not the commodities were produced for sale rather than for home use it is impossible to state, but experience and observation have shown that many farm families still deprive themselves of milk, cream, butter, broilers, and other desirable products because of the money that may be obtained from selling them. The price for which

the commodity could have been sold in the local market seemed a proper basis for evaluating them. In these communities, potatoes were probably the only commodity not generally raised for sale. Prices for each route are given, as these varied appreciably because of local marketing facilities and conditions. The valuation was based upon the assumption that the produce was of saleable quality, and that the family could have sold it if they had not used it. The value at city prices would have been much greater. However, even at the valuation given, it is clear that the use of farm produce by the farm family appreciably extends the income. The greatest variation is shown in the use of butter. Only 8 per cent of the families on the Steele County route made their own butter; 75 per cent on the Cottonwood-Jackson County route. Differences in marketing facilities probably explain this. Steele County has well supported co-operative creameries to which farmers take their cream for the local manufacture of butter; in Cottonwood and Jackson Counties the cream was shipped out from the local cream stations for the manufacture of butter elsewhere. The amount of money spent for butter and the value of the butter made and used on the farms are given in Table 5 for each route and the average value of butter used per year by each family.

Table 5

Average Quantity of Butter Used per Family and Its Value at 1924 Prices

Commodity	Steele County		Cottonwood-Jackson County	
	Lb.	Value	Lb.	Value
Butter purchased	221.6	$105.93	69.2	$23.53
Butter produced on farm.....	4.3	2.06	89.9	37.49
Total butter consumed.....	225.9	$107.99	159.1	$61.02

Table 6

Average Consumption per Family and per Capita of Certain Products Supplied Directly from the Farms, 1920-1924

	Steele County Route			Cottonwood-Jackson County Route		
	Average adult equivalents, 4.06			Average adult equivalents, 3.88		
	Per family per year	Per person per year	Per person per day	Per family per year	Per person per year	Per person per day
Butter, lb.*	225.9	55.6	0.15	159.1	41.0	0.11
Whole milk, qt....	1,177.0	289.0	0.79	607.0	156.0	0.43
Meat, lb.	685.0	169.0	0.46	684.0	176.0	0.48
Eggs	1,398.0	344.0	0.94	1,332.0	343.0	0.94
Potatoes, lb.	1,548.0	381.0	1.02	1,182.0	305.0	0.84

* These figures represent the total amount of butter used per family per year; for the Steele County route, 221.6 lb. purchased; for the Cottonwood-Jackson County route, 69.2 lb.

The price of butter was less on the Cottonwood-Jackson County route than on the Steele County route. Table 6 shows, also, that the per capita consumption of butter was lower. The families on this route were smaller and the incomes were lower.

The Use of Milk

It is sometimes said that the farmer's family is ill fed with reference to milk and other farm products. Table 6 shows that each family used on the average, daily, one pint or more of milk for each adult equivalent.

Many leading experts in nutrition advocate the use of one quart of milk per child through adolescence—twice the amount recommended for adults. Since the original records state the size of the family in terms of the adult, it has not been possible to gain specific or detailed information concerning the use of milk by individual families. The situation can best be illustrated by an example. Given a family of two adults, husband and wife (who does moderate work), a boy 13-14 years of age, and a girl from 10-12 years. On the basis of adult equivalents this family would be equal to 3.2 adults. They would then use about 2 quarts of milk daily, according to the report for the two groups. On the basis of nutritional needs, this amount might meet the minimum per capita requirement but would be 33 per cent below the best per capita requirement for health and growth. It can easily be seen that as the number of children in the family increases, these average figures represent a decrease in the adequacy of the amount of milk per capita used. However, these figures represent the average consumption for all the families co-operating in the investigation. A more detailed study of the use of whole milk by individual families shows that while 60 per cent of the families used one pint or more of milk per adult equivalent, daily, practically 40 per cent used less, which probably indicates a serious nutritional deficiency for the children.

Table 7

Average Daily Consumption of Whole Milk per Adult Equivalent Expressed by Number of Families

Route	Over 2 pints	1½-2 pints	1-1½ pints	Less than 1 pint	Total
Steele County	9	15	6	8	38
Cottonwood Jackson County	1	2	16	24	43
Per cent	12.3	21.0	27.2	39.5	100.0
Total	10	17	22	32	81

The situation, therefore, for these 32 families using less than one pint per adult equivalent daily, needs to be most carefully considered. A closer examination of the data for these families shows that 13 of

the 32 families used cream and skimmilk in appreciable amounts; 4 families used one quart or more of skimmilk in addition to approximately ¼ pint of cream for each adult; and 9 families used approximately one pint of skimmilk and ¼ pint of cream in addition to the limited amount of whole milk. The use of skimmilk and cream may compensate in some cases for the insufficient amounts of whole milk consumed, but no evaluation was possible of the amounts of skimmilk and cream in terms of whole milk.

There seems to be no relation between the amount of milk used and such factors as nationality, income, ownership or rental of farm, location, and general intelligence and farming ability. Of the 19 families using less than the dietary standard of one pint of whole milk or its equivalent per day per adult, 11 owned their farms; 8 had an average income of $1,600 or more reported for this area and study; 13 had an average farm investment of $26,900 or more; all lived between 2½ and 8 miles from town; and each family owned an automobile. The nationalities included Scandinavian 5, German 5, native American 5, English 2, Bohemian and French 1 each. Only 3 of these farmers were rated low in native intelligence and farming ability, the others being average or above, in the judgment of the farm management worker.

Of the 10 families using over one quart of whole milk per adult per day, 3 were renters; 7 had less than the average income; and 5 less than the average farm investment. All were of native stock or born in this country (one of English, one Bohemian, and one of Danish-German descent) and lived from 2½ to 5 miles from town. Only one was rated low in native intelligence and farming ability.

A study of the seasonal use of dairy products reveals little information concerning dietary habits with reference to these commodities, as shown in Figure 1, in which, for the Cottonwood-Jackson County route, the average amounts per family per month for one year are presented graphically. Apparently the amount of cream used was relatively constant throughout the year. There appeared some tendency to use less whole milk during the late winter and spring when labor requirements of the farm are relatively low. The milk consumption does not fall off in early winter with the slackening of work as one would expect, especially as the use of skimmilk increases at this time. Possibly the heavier production of milk in this period accounts for this fact. Not only do many cows freshen in the fall but in many cases calves that have been running with the cows are weaned when the cows are taken off pasture and the cows are milked. The lower consumption of farm-made butter in summer is due to the fact that less butter is made on the farm at this time. The greater difficulty in churn-

ing and handling butter without proper cooling facilities and the fact that the housewife is busier with both farm and household tasks probably account for this falling off. Too, the surplus sold brings a lower price. While the farm undoubtedly furnished most of the butter used by the family, 25 per cent of the families on this route purchased all of it. In view of these variations and of the previously noted deficiency in information concerning the amount of milk used, a further detailed study is needed of the use of dairy products on Minnesota farms.

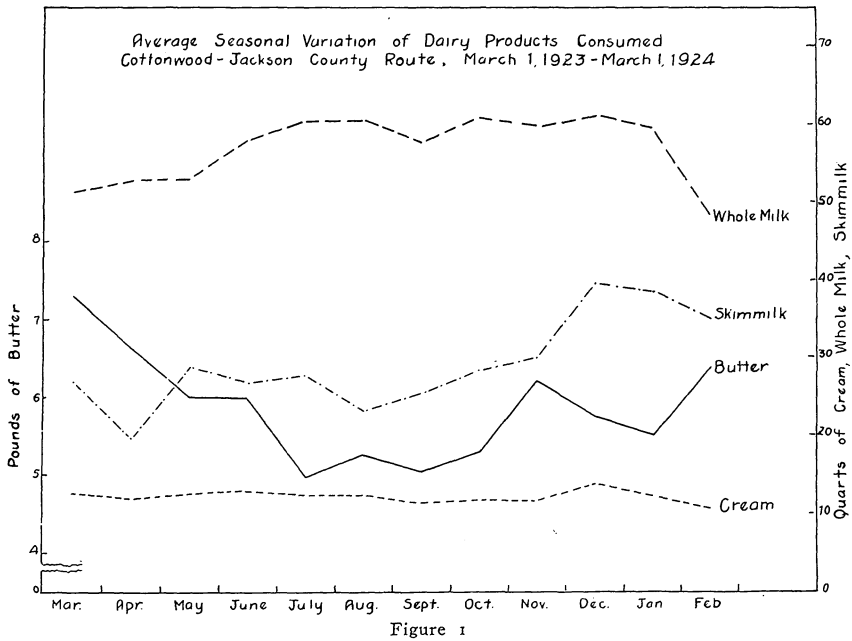


Figure 1

The Use of Meat

The average per capita consumption of meat daily for all families was approximately one-half pound. This is little more than the estimated per capita consumption of meat in the United States—178 pounds (Census of 1900). These figures give a better general view of the place of meat in the normal dietary than more recent data reflecting abnormal conditions resulting from the World War.[2] This amount is less than that quoted by the United States Department of Agriculture[3] for rural sections, namely 187.1 pounds per capita. Few families slaughtered calves or sheep for home use, and less than half produced beef for family consumption (Table 4).

Analysis of the data for the different families (Table 8) reveals the variations in amount of meat used per family. Practically 90 per

[2] Sherman, Henry C. "Food Products," p. 245. The Macmillan Company.
[3] Yearbook of the U. S. Dept. of Agr., p. 824. 1920.

cent of these families used ¼ pound or more of meat per person per day, and over half used at least ½ pound. Six of the families using ½ pound or more of meat per person per day used one quart of milk per person per day; 20 of these families used less than one pint of milk. On the other hand, all but one of the families using less than ¼ pound of meat per person per day used over one pint of milk and over half used 1½ pints or more of milk. It is sometimes said that meat and milk tend to replace each other in the diet. These figures show such a tendency. It should be remembered that the adequacy of the amount of milk used is questioned.

Table 8

Variation in Total Meat Consumption, by Families

	Daily amounts per person per family				
	Over 1 lb.	½-1 lb.	¼-½ lb.	Less than ¼ lb.	Total families
Steele County	3	16	12	7	38
Cottonwood-Jackson County	1	27	13	2	43
Total families	4	43	25	9	81
Per cent	4.9	53.2	30.8	11.1	100.0

Table 9

Variation in Pork Consumption, by Families

	Daily amounts per person per family				
	Over ½ lb.	¼-½ lb.	Less than ¼ lb.	None	Total families
Steele County	5	17	13	3	38
Cottonwood-Jackson County	11	16	16	..	43
Total families	16	33	29	3	81
Per cent	19.8	40.7	37.8	3.7	100.0

Table 10

Variation in Beef Consumption, by Families

	Daily amounts per person per family				
	Over ½ lb.	¼-½ lb.	Less than ¼ lb.	None	Total families
Steele County	3	9	8	18	38
Cottonwood-Jackson County	2	9	15	17	43
Total families	5	18	23	35	81
Per cent	6.2	22.3	28.3	43.2	100.0

That pork was the meat used in largest quantities is shown in Table 9. All but 3 families used pork; 35, or over 40 per cent, raise no beef for home use. Practically 60 per cent used ¼ of a pound or more of pork per day; 29 per cent used an equivalent amount of beef.

Poultry was used in smaller quantities than pork or beef but apparently was a favorite meat, as all but one family used some home-grown poultry. (See Table 11.)

Table 11

Variation in Poultry Consumption by Families

	Daily amount per person per family					
	Over ¼ lb.	⅛-¼ lb.	1/16-⅛ lb.	Less than 1 1/16 lb.	None	Total families
Steele County	1	2	17	18	..	38
Cottonwood-Jackson County	..	5	15	22	1	43
Total families	1	7	32	40	1	81
Per cent	1.2	8.7	39.5	49.4	1.2	100.0

Only 5 of the 81 families reported the use of any lamb or mutton and none of these used more than ⅛ of a pound per person per day. The use of veal was reported by only 4 of these families, only one of whom used as much as ¼ pound per person per day.

It must be remembered that the farm did not produce all of the meat used by the family, as the records show that considerable amounts of meat were purchased. Pork and poultry probably are large items in the meat diet because these meats best lend themselves to the use of the farm family, poultry for immediate consumption, and pork because of its relative convenience for preservation.

The Use of Eggs and Potatoes

That practically every family used eggs from the farm is shown by the figures in Table 12.

Table 12

Variation in Egg Consumption, by Families

	Daily amount per person					
	More than 2	More than 1	More than ½	Less than ½	None	Total families
Steele County	1	12	25	..	..	38
Cottonwood-Jackson County	2	20	19	1	1*	43
Total families	3	32	44	1	1	81
Per cent	3.7	39.5	54.4	1.2	1.2	100.0

* The poultry on this farm were owned by the operator's parents and were not included in this study.

The average per capita consumption was practically one egg per day for all families. This is above the average consumption for the United States, according to Sherman.[4] "The United States Census Bureau estimates the egg industry at seventeen and one half dozen eggs

[4] Sherman, Henry C. "Food Products," p. 156. The Macmillan Company.

per capita per year; i.e., an average of 210 eggs per year or 4 eggs for each person per week in the United States."

The use of potatoes does not deviate materially from the average for all the families, as 57 per cent used over one pound, and 95 per cent used ½ pound or more per person per day. (See Table 13.)

Table 13

Variation in Potato Consumption, by Families

	Daily amount per person					
	Over 2 lb.	Over 1 lb.	½-1 lb.	Less than ½ lb.	None	Total families
Steele County	1	31	4	1	1	38
Cottonwood-Jackson County	1	13	27	2	..	43
Total families	2	44	31	3	1	81
Per cent	2.5	54.3	38.3	3.7	1.2	100.0

It is to be regretted that information is not available concerning the use of grain products, fruits, and vegetables by these families, so that one might know whether or not their meals are adequate.

LABOR CONTRIBUTION OF THE FAMILY TO THE FARM AND OF THE FARMER AND FARM HELP TO THE HOUSEHOLD

Contribution of the Family to the Farm

These records of the farm business kept by the Division of Farm Management and Agricultural Economics have been further analyzed to learn the nature and amount of the services contributed by the wives and the boys and girls to the farm business, and by the farmer and farm help to the household or family needs. While the farm family and the farm business are naturally interdependent, it seemed reasonable to try to separate the services related to activities concerned primarily with the business of farming, such as dairying, crops, and livestock; and those concerned directly with the needs of the family, as gardening, preparation of fuel, transportation of supplies from town, and such odd jobs as putting on storm windows and cutting ice. Any activity regularly carried on by the women was not recorded when done by the men, for example, laundering. As it was thought that the situation with reference to family labor was similar on both routes, the records for one route only (Steele County) have been tabulated.

The terms used with reference to farm work and their definitions are as follows:

a. Dairy utensils—washing milk pails, milk cans, cream separator.

b. Other dairy work—feeding, milking, and caring for cows, and marketing cream.
c. Poultry—all work with poultry.
d. Other livestock—regular chores on livestock other than cows.
e. All other work—work with grain or crops (cultivating, threshing, etc.) repair of farm equipment, farm business.

That the farm family makes a substantial labor contribution to the farm business is shown by the fact that while the total number of hours of work per farm from all sources was 8,755 per year for the five-year period, 1,269 hours of work, or 14.5 per cent, were contributed by the wives and by boys and girls under 19 years of age. Actually more than 1,269 hours were contributed, as the total number has been scaled down to a man-equivalent basis, considerably more time in clock hours having been spent by the wives and the boys and girls. The route man evaluated the time spent, using his judgment as to whether or not one hour spent by the woman or boy or girl was equivalent to one hour spent by an adult man. This evaluation of the equivalent would obviously be dependent upon at least two factors: One the nature of the service, for example, whether plowing or loading hay, and the other the health and strength of the woman or boy or girl. Included in the 1,269 hours of work contributed by the wives and the boys and girls are 302 hours for help with the garden, potatoes, hauling from town, and fuel. Ths amounts to an average of less than 12 minutes per day. Obviously the help of the wives and the boys and girls releases the farmer for other farm work. The amount and distribution of the labor by the wives and children is given in detail in Table 14, in summary form in Table 15, and graphically in Figure 2. The following discussion is based upon an analysis of these tables.

Except for three housewives in 1924 who did no farm work, every one assisted with the farm work daily—most of it cleaning dairy utensils or working with poultry. Nearly every housewife worked daily on these two activities, but a few helped with other kinds of farm work. Each housewife spent on the average each day for the five-year period, practically 0.71 hour on poultry; 0.55 hour on dairy utensils, and the rest, about 0.22 hour on the other work suggested, making a total of practically 1.48 hours. The range was from none to a little over 4 hours daily. While the average time, 1.48 hours, may seem small out of a 24-hour day, it must be remembered that it was a constant unit for each day, including Sunday, and that it means just that much less time available for the housewife for herself and other interests of her family.

The labor contributions by the boys and girls include the record of work done by the boys, ages 9-18 years, and the girls, ages 11-18 years.

Table 14

Yearly Classified Record of Average Daily Labor Contributions of Women, Boys, and Girls to the Farm Business, 1920-24
Steele County Route

Year	Families on route	Wives		Boys, ages 9-18		Girls, ages 11-18	
		No. on route	No. working	No. on route	No. working	No. on route	No. working
1920	23	23	23	12	10	11	7
1921	21	21	21	13	13	9	7
1922	22	22	22	15	15	8	0
1923	22	22	22	13	13	5	0
1924	22	22	19	14	14	3	0
1920-24	22	22	21.4	13.4	13.0	7.2	2.8
Per cent of total	..	..	..	..	..	..	..

Year	Labor contributions (hours per day)					
	Dairy dishes			Other dairy work		
	Women	Boys	Girls	Women	Boys	Girls
1920	0.56 (23)*	.....	0.016 (2)	0.21 (9)	0.65 (10)	0.22 (6)
1921	.48 (19)	.....	.....	.26 (9)	1.06 (13)	.08 (5)
1922	.47 (20)	0.009 (2)	.....	.20 (5)	1.25 (14)	.....
1923	.61 (21)	.....	.....	.19 (6)	1.20 (11)	.....
1924	.62 (18)	.....	.....	.04 (2)	0.67 (10)	.....
1920-24	0.55 (20.2)	0.002 (3)	0.003 (2)	0.18 (6.2)	0.96 (58)	0.06 (11)
Per cent of total	37.00	0.11	3.08	12.00	51.00	62.90

Year	Labor contributions (hours per day)					
	Poultry			Other livestock		
	Women	Boys	Girls	Women	Boys	Girls
1920	0.89 (21)	0.01 (1)	0.08 (5)	0.004 (3)	0.06 (6)	0.01 (3)
1921	.50 (20)	.003 (5)	.002 (3)	.02 (2)	.15 (8)	.....
1922	.54 (22)	.001 (2)	.....	.003 (1)	.17 (9)	.....
1923	.76 (21)	.04 (6)	.....	.004 (3)	.17 (10)	.....
1924	.84 (18)	.03 (5)	.....	.... (0)	.12 (10)	.....
1920-24	0.71 (20)	.02 (19)	0.02 (8)	0.01 (1.8)	0.14 (43)	0.002 (3)
Per cent of total	48.0	0.79	17.51	0.46	7.10	2.07

Year	Labor contributions (hours per day)					
	All other work			Total average time		
	Women	Boys	Girls	Women	Boys	Girls
1920	0.06 (13)	0.38 (10)	0.05 (7)	1.73	1.10	0.38
1921	.07 (8)	0.73 (13)	.022 (4)	1.32	1.04	0.11
1922	.02 (8)	1.07 (15)	.....	1.22	2.50	....
1923	.04 (4)	0.95 (13)	.....	1.60	2.36	....
1924	.002 (3)	0.81 (14)	.....	1.49	1.63	....
1920-24	0.04 (7.2)	0.79 (65)	0.014 (11)	1.48	1.90	0.10
Per cent of total	2.55	41.00	14.44	100.00	100.00	100.00

* The numbers in parentheses represent number of persons doing dairy utensils, other dairy work, etc.

Table 15

Summary of Classified Record of Daily Labor Contribution of Women, Boys, and Girls

Average for five-year period, 1920-24

	Labor contributions (hours per day)						
	Dairy dishes	Other dairy work	Poultry	Other livestock	All other work	Total	Range
Women	0.55	0.18	.0.71	0.01	0.04	1.48	0-4.13
Boys (9-18 yrs. inc.)....	.002	.96	.02	.14	.79	1.90	0.02-7.40
Girls (11-18 yrs. inc.)...	0.003	0.06	0.02	0.002	0.014	0.10	0-3.63

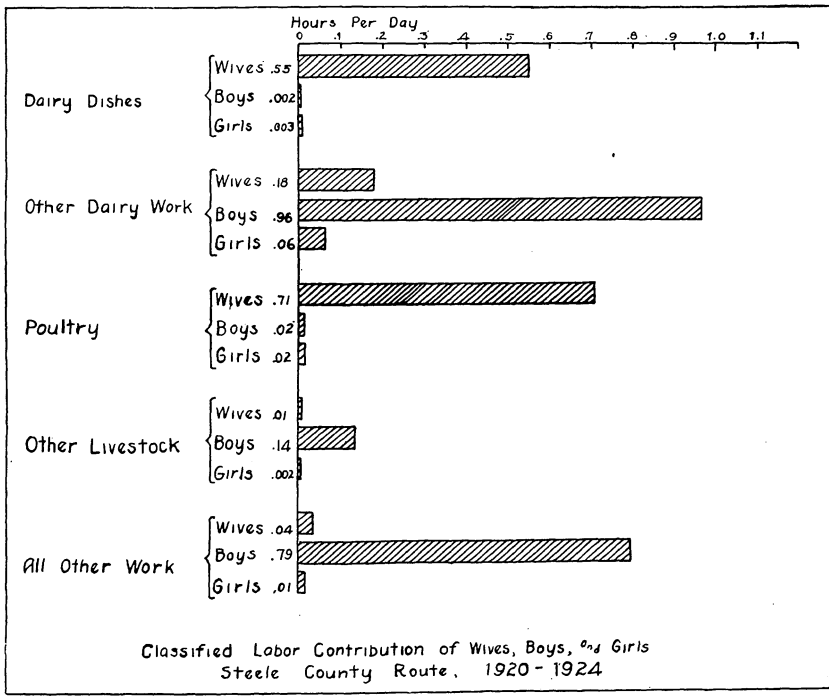


Figure 2

Each of 65 of the 67 boys between these ages worked on the average a little less than 2 adult equivalent hours (1.90) each day, spending 0.96 hour on chores with cows, 0.79 hour on crops and miscellaneous farm work, and the rest, 0.16 hour, on other livestock and poultry. While the average time spent on farm work by the boy was about 2 hours each day, the range varied from practically none to 7.40 hours. Again, it should be noted that the total time spent was greater than that represented by the adult equivalent hours, as the number of clock hours were reduced to this basis by the route statistician.

Twenty-six boys worked as much as 4 hours a day, on the average, throughout the year. Their ages and the number working as much as 4 hours daily are as follows:

Age, years	Number	Age, years	Number
13	2	16	7
14	2	17	7
15	4	18	4

This shows that 40 per cent of the boys working gave between 4 and 7 hours daily to the farm business, an average of 5.51 adult-equivalent hours. No boy under 16 years of age worked more than 5 hours a day, on an average. That more older boys than younger ones did farm work is shown in Table 16, where 40 over 14 years of age is in contrast to 25 under 14 years. It should be noted that while the unit of time followed has been always interms of hours per day, the time spent by the children may have been more in clock hours than the amount recorded. This emphasizes more strongly the large labor contribution rendered to the farm business by the boys.

The labor contribution to the farm enterprise by the girls was much less than that by the housewives or boys, not only because there were fewer—only 14 of the 36 girls of ages 11-18 years did work outside the house—but because those working on farm activities rendered a much smaller service. During the five-year period, the records show that 7 girls did farm work in 1920 and 1921, and no girl did any farm work the following three years. In 1920 the 7 girls represented 4 families, and in 1921 they represented 5 families. The average time per person per day for the five-year period was so small as to be almost negligible, only 0.10 hour. The average per day, based on the 2 years when girls did farm work, amounted to about 12 minutes only, being spent for the most part on miscellaneous work and poultry. Mention might be made also of the fact that there were only 8 girls on the route below the age of 11 years. Apparently among the families on this route the girls did not help regularly with the farm, as only 29 per cent contributed any farm service and this in a relatively limited amount. Also, there is little difference in the number of girls at the different ages working, as shown in Table 17. Only three girls worked as much as an average of one hour a day throughout the year. Two of these were 13 and one 18 years old. The girl who spent an average of over 3.5 hours daily throughout the year on farm work was 18 years old. It is probably reasonable to assume that the daughters of these farmers made their labor contribution to the family by their service indoors, thereby freeing their mothers for work outside.

Not only has the kind and amount of the farm work been considered, but also the season, as shown in Figure 3. The contribution

by the girls has been omitted because it was so small. It is clear that the housewives' work was heaviest during April and May, owing to extra work with the chickens in the spring; while the boys' work was heaviest in June, July, and August, in vacation from school, when they worked out in the fields.

Contribution of the Farmer to the Home

The labor contribution to the household by the farmer and farm help has been considered under these headings: (1) garden, (2) fuel, (3) hauling groceries and supplies from town, and (4) other work,

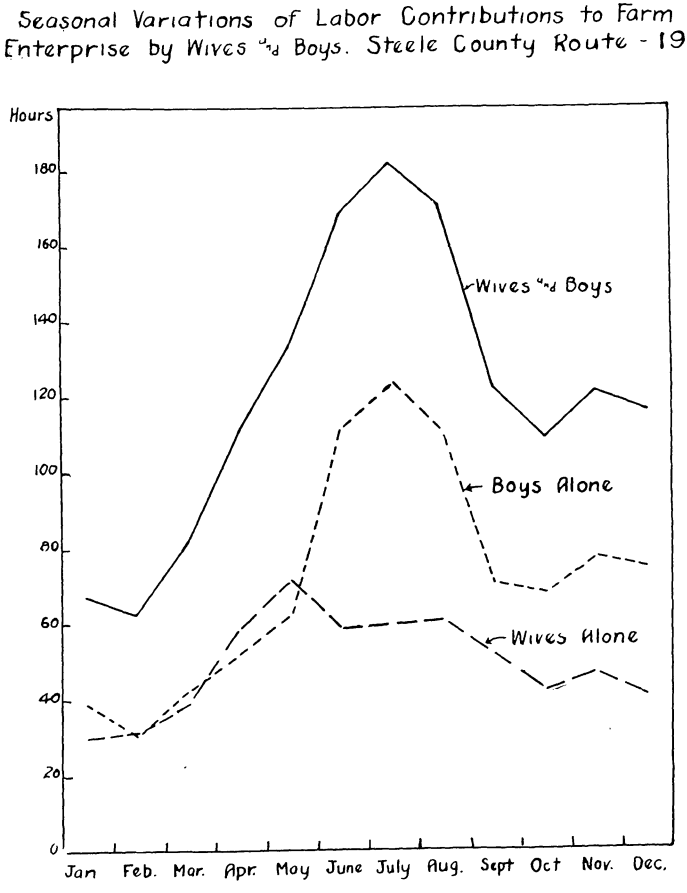


Figure 3

such as odd jobs about the house, meat cutting and curing, putting on storm windows, and cutting and hauling ice. This information is given in Table 18. The average total time per day was approximately 36 minutes (0.62 hour) or practically a little more than half an hour a

day. Almost half of this time was spent on fuel, practically a third on gardening, and the rest on other tasks. Obviously, the total amount of time spent by the husband on household activities or interests was relatively small—approximately one-third of the amount of time in adult equivalent hours spent by the housewife on the farm enterprise and one-fourth the amount in like terms spent by the boys. It is, however, perhaps significant that every farmer provided at least some of the labor necessary for fuel for his household and 90 per cent helped care for the family garden. More time was spent on fuel in the winter months than in other seasons.

The question might be raised as to how much time the housewives and children gave to these household activities. Included in "all other work" by them are 302 hours spent on orchard and garden, potatoes, hauling from town, and fuel. Only 6 women contributed any service here, and the range of time for any one year was 3½ to 43 hours, with an average of 0.07 hour per day. They helped only with the garden and potatoes. Twelve children from 4 families helped with these activities, a total of 169½ hours for the five-year period—32 hours for garden or orchard, 65½ hours for potatoes, 34 hours for hauling from town, 36 hours for fuel, and 2 for caring for fires and cleaning the cellar—making a daily average of less than 6 minutes. The time spent by the boys and girls for any one year ranged from 3 to 42 hours. Only one girl helped, and she for only one hour.

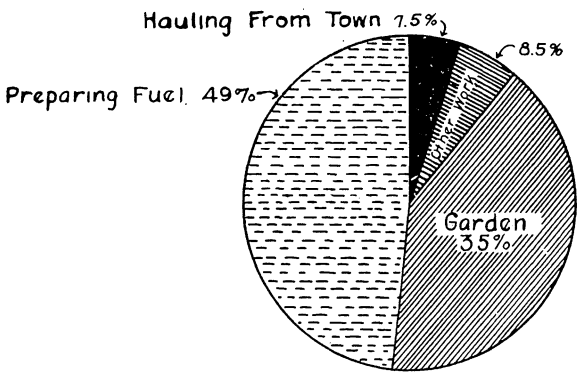
Table 16

Frequency Distribution by Age (9-18 Years) of Boys Who Worked on the Farm, 1920-24

Steele County Route

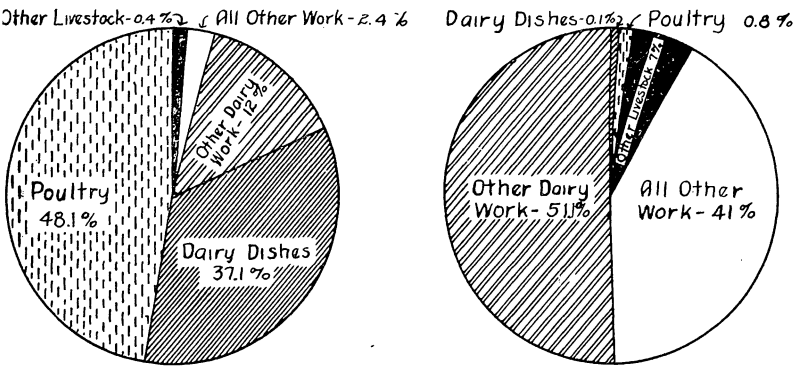
Year	Age										
	9	10	11	12	13	14	15	16	17	18	Total
1920	1	1	2	1	1	..	4	..	..	..	10
1921	..	..	2	1	2	2	..	5	1	..	13
1922	1	..	1	2	2	2	2	..	4	1	15
1923	..	1	..	..	2	1	2	3	..	4	13
1924	1	1	2	..	1	2	1	2	4	..	14
Total	3	3	7	4	8	7	9	10	9	5	65

The classified labor contribution of housewives and boys to the farm business and of the farmer and farm help to the home is shown graphically in percentage in Figure 4.



Farmer and Hired Help

Classified Labor Contribution of Farmer and Hired Help to Household, Steele County Route, 1920-1924



Wives Boys

Classified Labor Contribution of Wives to Farm Enterprise Compared with Boys, Steele County Route, 1920-1924

Figure 4

Table 17

Frequency Distribution by Age (11-18 Years) of Girls Who Worked on the farm, 1920-24

Steele County Route

Year	Age								
	11	12	13	14	15	16	17	18	Total
1920	..	1	1	..	1	2	1	1	7
1921	1	..	1	2	..	..	2	1	7
1922	..	..	..	..	..	..	..	..	..
1923	..	..	..	..	..	..	..	..	..
1924	..	..	..	..	..	..	..	..	..
Total	1	1	2	2	1	2	3	2	14

Table 18

Average Labor Contributions of the Farmer and Hired Help to Household, 1920-24

Steele County Route

Year	Families on route	Hours per day				
		Garden	Fuel	Hauling from town	Other work	Total
1920	23	0.18 (19)*	0.30 (23)*	0.10 (17)*	0.06 (18)*	0.63
1921	21	.21 (19)	.43 (21)	.06 (17)	.05 (14)	.75
1922	22	.25 (20)	.30 (22)	.04 (12)	.05 (19)	.64
1923	22	.23 (20)	.28 (22)	.02 (13)	.04 (16)	.56
1924	22	.23 (22)	.23 (22)	.01 (8)	.07 (19)	.54
1920-24	..	0.22 (100)	0.30 (110)	0.05 (67)	0.05 (86)	0.62
Per cent of total	..	35.51	48.80	7.54	8.51	100.00

* Figures in parentheses represent number of men doing work.

INCOME AVAILABLE FOR FAMILY LIVING

The money income available for family living is not less important than the income in terms of farm produce and family service or labor. The 81 farmers co-operating in this project operated farms averaging more than 180 acres and yielding an average net cash income of approximately $1,600 per year for the five-year period. The average net figures for each route for each year are given in Table 19.

In this study the figures given for incomes available for family living represent the net cash income available from the operation of the farm business. They are not the net farm income, as inventory changes have not been included.

Table 19

Excess Cash Farm Receipts Over Cash Farm Expenses of Farm Enterprise, 1920-25

Year	Steele County route	Cottonwood-Jackson County route
1920	$1,905	$ 928
1921	1,334	1,077
1922	1,856	1,441
1923	2,180	1,278
1924	2,025	1,783
Average	$1,900	$1,301

A distribution of these incomes is given in Table 20. However, these incomes are slightly larger than those given in Table 19, because certain items included as farm expense in the original records and income from sources outside the farm have been included. As the costs of telephone, dwelling upkeep and repair, farm books and magazines, farm clubs and organizations were considered as farm expense in the original records, these items have been added to the differences between cash receipts and cash expenses because they have a definite value or benefit to the family. Also, the figures for cash income in Table 20 include any income from sources outside the farm business. This outside income, while it sometimes occupied the farmer's time, did not require the use of any of the farm equipment. The original records may not have given complete information as to the amount of outside income, as this was not particularly required, but at least the amount reported was available. This came from such sources as election fees, dividends and interest, jury service, school board service, boarders, farm bureau work, county commission service, and gifts. The average outside income for all farms was about $65 per year. Only 102 farms, or 46 per cent, received outside income. The families receiving outside income averaged about $141 from this source. The yearly cash income available for family living per farm ranged from $—1,025 to $7,475. Thirty-four and eight-tenths per cent had incomes ranging from $800 to $1,600 and 23.5 per cent had incomes from $1,600 to $2,400.

The distribution of income was similar for both those owning or renting their farms. Altho in ten instances the farm business reported expenses in excess of cash receipts, in every case when the farmer co-operated for more than a year there was a net cash income per year for the period during which he co-operated. Among this group of farmers one had a negative cash balance, but he co-operated for one year only. In addition to the income available as listed in Table 20, the farm family had the use of the dwelling and the personal use of the automobile (both of these being considered farm expense items) and also farm produce for family use.

Table 20

Frequency Distribution of Range of Yearly Cash Income for Steele County Route, Cottonwood-Jackson County Route, and the Two Routes Combined, 1920-25

Yearly cash income	No. on Steele County route		No. on Cottonwood-Jackson County route		Total on both routes		Total on both routes owning and renting farms	
	Owning farms	Renting farms	Owning farms	Renting farms	Owning farms	Renting farms	No.	Per cent
$—1,600-$ 800	1	1	1	..	2	1	3	1.4
—800- 0	3	..	2	2	5	2	7	3.2
0- 800	10	4	16	8	26	12	38	17.2
800- 1,600	29	3	34	11	63	14	77	34.8
1,600- 2,400	21	1	17	3	48	4	52	23.5
2,400- 3,200	18	1	4	3	22	4	26	11.7
3,200- 4,000	3	2	2	3	5	5	10	4.5
4,000- 4,800	4	..	..	..	4	..	4	1.8
4,800- 5,600	1	..	1	1	2	1	3	1.4
5,600- 6,400	..	..	..	..	..	..	..	..
6,400- 7,200	..	..	..	..	..	..	..	..
7,200- 8,000	1	..	..	..	1	..	1	0.5
Total	101	12	77	31	178	43	221	100.0

Analysis of the estimated values of the farm dwellings showed a range in value from $282 to $8,000, with an average of about $1,925.

The farm investment showed a range from $11,250 to $60,000, an average of $26,900.

SUMMARY

1. The farm supplied all of these families with practically all the milk, eggs, and potatoes and much of the meat, thereby extending by so much the use of their money income.

The average daily consumption of these products per family per person in terms of adult equivalents were: Whole milk, one pint; meat, ½ pound; egg, one; potatoes, one pound. Pork and poultry were seemingly the favorite meats, as practically all of these families produced these meats for home use. Few families produced any lamb, mutton, or veal for the use of the family.

2. Members of the family, other than the farmer, contributed 14.5 per cent of all the hours of work on the farm. Since these are adult-equivalent hours, they represent less than the number of clock hours.

Cleaning dairy utensils and work with poultry constituted the chief farm activities for the housewives and occupied practically 1½ hours each day.

Practically all of the boys between the ages of 9 and 19 contributed on the average about 2 hours of work daily, chiefly on chores with cows or on crops and miscellaneous farm work. The labor contribution of the girls to the farm enterprise was practically negligible, probably

because they were occupied with work inside the home, thus freeing their mothers and brothers for work outside.

The farmer and hired help spent approximately ½ hour daily on activities directly concerned with the interests of the family.

3. The average yearly income available for family living was $1,600. The largest number of families had yearly incomes of $800 to $1,600. The range of income for the next largest number was $1,600 to $2,400.